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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,894	04/06/2001	Koji Noguchi	35.G2768	3411

5514 7590 07/03/2003

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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/826,894

Applicant(s)

NOGUCHI ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,6,9 and 13 is/are pending in the application.
- 4a) Of the above claim(s) 4,7,8,10-12,14,15 and 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5,6,9,13 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/30/2003 has been entered.

Claims 4, 7-8, 10-12, 14-15 and 17-22 have been cancelled on Amendment B filed on 12/9/2002 (paper 8).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-3, 5, 6, 9, 13 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Limitation "temperature change of the retardation value of said liquid crystal device is reduced ONLY by changing a pre-tilt angle of said liquid crystal molecules" in claim 1 considers as New subject Matter.

Specification discloses ONLY:

- "A phase compensator plate was used to obtain high contrast, as shown in FIG. 2. The phase compensator plate was set perpendicular to the orientation direction (the uniaxial direction). It was found that using such an orienting means wherein the orientation direction of the phase compensator plate is taken into consideration not only reduces change in retardation, but also markedly reduces change in display capabilities, more specifically, temperature change of contrast" (page 9 lines 3-12).
- "The oriented film was formed according to the conditions of the third embodiment, and printing was performed only at the time of applying the oriented film. Data and gate drivers were mounted to this substrate, as shown in FIG. 8" (page 20 lines 15-20).
- "temperature change of the retardation value of the liquid crystal device is reduced by changing the orientation state of liquid crystal molecules so as to compensate for change in the birefringence of the liquid crystal composition due to changes in temperature" (page 3 lines 11-15).
- FIG. 4 is a graph with temperature as the X axis and the pre-tilt angle of liquid crystal molecules as the vertical axis. As shown in the figure, the liquid crystal exhibits a high pre-tilt angle in the event that the temperature is on the low side,

and exhibits a low pre-tilt angle in the event that the temperature is on the high side. That is to say, it has been found that arranging so that the pre-tilt angle becomes smaller at higher temperatures where the  $\Delta n$  of the liquid crystal composition becomes smaller, and the pre-tilt angle becomes greater at lower temperatures where the  $\Delta n$  of the liquid crystal composition becomes greater allows the temperature dependency of the retardation value of the liquid crystal device to be markedly reduced" (page 7 lines 6-18).

- "As with the present embodiment, devising some way to compensate for the  $\Delta n$  of the liquid crystal which changes with temperature, more specifically changing the pre-tilt angle according to temperature so as to compensate for the  $\Delta n$ , allows the temperature change of the retardation value to be reduced" (page 8 line 22 to page 9 line 2).

Furthermore, Fig. 3 shows the change of  $\Delta n$  with temperature. Fig. 4 shows the change of pre-tilt angle with temperature. Figs. 5-6 show the change of retardation with voltage. Figs. 10-11 show the contrast difference at 30°C and 10°C with pre-tilt angle. There is not graph shows temperature change of the retardation value with a pre-tilt angle of said liquid crystal molecules.

Therefore, the rejection of previous office action is still applied now.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 3, 5, 6, 9, 13 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaneko (US6141070A).

In regard to claims 1, 3 and 9, Kaneko also further teaches in the third embodiment (Fig. 11, col. 16 lines 45-49) a liquid crystal device comprising

- two substrates 1 and 4;
- nematic liquid crystal 7 sandwiched between said substrates;

wherein the twisted angle of zero degrees (parallel) or of 180 degrees (anti-parallel) (col. 1, lines 39-43 in the background of invention), therefore, the direction of uniaxial orientation (or nematic director) on rubbing alignment layers formed on upper and lower substrates is either parallel or anti-parallel; the zero-twisted nematic type device is also called an Electrically Controlled Birefringence (ECB) type device according to claim 9.

wherein temperature change of the retardation value of said liquid crystal device is reduced by changing a pre-tilt angle of said liquid crystal molecules so as to compensate for change in a birefringence of said nematic liquid crystal due to changes in temperature according to claim 3 (col. 11 lines 43-45).

Art Unit: 2871

In regard to claims 5, 13 and 16, a liquid crystal device using a normally-white mode with no voltage (this is Normal-White display), wherein the high-voltage side (voltage applied) of the driving voltage is used as black, thereby black is displayed by performing phase compensation between liquid crystal layer and retardation layers according to claims 5, 13 and 16.

### ***Allowable Subject Matter***

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not anticipate obvious to one ordinary skill in the art of a liquid crystal display device, with the combination of

- The refractive index anisotropy of liquid crystal composition having the nematic liquid crystal as the primary component at 30°C is 0.150 or more;
- The pre-tilt angle of liquid crystal molecule at 30°C is in a range of 10° to 45° at the substrate interfaces.

### ***Response to Arguments***

Applicant's arguments filed on 5/30/2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

Kaneko fails to disclose the claimed invention wherein "temperature change of the retardation value of said liquid crystal device is reduced ONLY by changing a pre-tilt angle of said liquid crystal molecules".

Examiner's responses to Applicants' ONLY arguments are follows:

Limitation "temperature change of the retardation value of said liquid crystal device is reduced ONLY by changing a pre-tilt angle of said liquid crystal molecules" in claim 1 considers as New subject Matter (see 112 rejection above).


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

chn  
June 27, 2003

  
ROBERT H. KIM  
SUPERVISOR, PATENT EXAMINER  
ART UNIT 2800